General

Guideline Title

Ranibizumab for treating visual impairment caused by macular oedema secondary to retinal vein occlusion.

Bibliographic Source(s)

National Institute for Health and Care Excellence (NICE). Ranibizumab for treating visual impairment caused by macular oedema secondary to retinal vein occlusion. London (UK): National Institute for Health and Care Excellence (NICE); 2013 May. 62 p. (Technology appraisal guidance; no. 283).

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

Ranibizumab is recommended as an option for treating visual impairment caused by macular oedema:

- Following central retinal vein occlusion or
- Following branch retinal vein occlusion only if treatment with laser photocoagulation has not been beneficial, or when laser photocoagulation is not suitable because of the extent of macular haemorrhage and
- Only if the manufacturer provides ranibizumab with the discount agreed in the patient access scheme revised in the context of the National Guideline Clearinghouse (NGC) summary of the National Institute of Health and Care Excellence (NICE) guideline Ranibizumab for treating diabetic macular oedema (rapid review of NICE technology appraisal guidance 237)

People currently receiving ranibizumab whose disease does not meet the above criteria should be able to continue treatment until they and their clinician consider it appropriate to stop.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Disease/Condition(s)

Macular oedema secondary to branch or central retinal vein occlusion

Guideline Category

Assessment of Therapeutic Effectiveness

Treatment

Clinical Specialty

Family Practice

Geriatrics

Internal Medicine

Ophthalmology

Intended Users

Advanced Practice Nurses

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To assess the clinical effectiveness and cost-effectiveness of ranibizumab for treating visual impairment caused by macular oedema secondary to retinal vein occlusion

Target Population

People aged 18 or over with visual impairment due to macular oedema secondary to retinal vein occlusion

Interventions and Practices Considered

Ranibizumab

Major Outcomes Considered

- Clinical effectiveness
  - Change in best corrected visual acuity (BCVA) from baseline in the treated eye
  - Mean change from baseline BCVA letter score over time to month 6
  - Percentage of patients who gained ≥15 letters from baseline BCVA at month 6
  - Percentage of patients who lost <15 letters from baseline BCVA at month 6
  - Incidence and severity of ocular and non-ocular adverse events (AEs) and serious AEs
- Cost-effectiveness

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Searches of Unpublished Data

Description of Methods Used to Collect/Select the Evidence

Note from the National Guideline Clearinghouse (NGC): The National Institute for Health and Care Excellence (NICE) commissioned an independent academic centre to perform an assessment of the manufacturer's submission on the technology considered in this appraisal and prepare an Evidence Review Group (ERG) report. The ERG report for this technology appraisal was prepared by British Medical Journal Technology Assessment Group (BMJ-TAG) (see the "Availability of Companion Documents" field).

Clinical Effectiveness

Description and Discussion of Appropriateness of Manufacturer's Search Strategy

The manufacturer's submission (MS) describes the search terms and strategies for the manufacturer's review of the literature up to 18 November 2010. The manufacturer searched multiple databases, including EMBASE, MEDLINE, MEDLINE In-Process and CENTRAL to identify relevant studies assessing the clinical effectiveness, cost effectiveness, and adverse effects of ranibizumab in patients with macular oedema (MO) secondary to branch or central retinal vein occlusion (RVO). The manufacturer also carried out extensive searches of online trial registries and proceedings from several key conferences (including Association of Research in Vision and Ophthalmology [ARVO] and European Association for Vision and Eye Research [EVER]). The ERG considers the search strategy used by the manufacturer to be comprehensive. As the manufacturer highlights, the search strategy did not include search terms that limited the search results to only randomised controlled trials (RCTs); searches were limited to human studies. However, the MS states that only RCTs were included in the assessment on the clinical effectiveness of ranibizumab. The manufacturer used multiple search terms for conditions and treatments, including terms for interventions listed as comparators of interest in the final scope issued by NICE. Although search terms for best supportive care were not specifically included in the search strategy, the ERG is confident that studies in which best supportive care was a comparator would have been identified for appraisal. It is not clear whether reference lists of identified RCTs were evaluated for suitable studies. The manufacturer also carried out a separate search for the identification of non-RCT data for bevacizumab. As part of the clarification process, the ERG requested the search strategy used to identify non-RCT data on bevacizumab. The manufacturer supplied the search strategy as academic in confidence. The ERG notes that the manufacturer's search strategy was comprehensive and considers that all studies could have been identified.

The ERG validated the manufacturer's search in EMBASE, MEDLINE and Medline In-Process, and the Cochrane library (08/06/2011), and generated a comparable number of studies to that generated by the manufacturer's search.

The manufacturer restricted their search to English language studies. To assess the potential impact of omission of non-English language studies, the ERG assessed RCTs identified in the Cochrane library (which includes studies in all languages) against the criteria listed in the MS. Fifteen non-English language RCTs were identified, none of which the ERG thought relevant to the decision problem. As only a limited number of non-English language studies were identified, to investigate further, the ERG searched EMBASE and MEDLINE and MEDLINE In-Process using the manufacturer's search strategy for clinical effectiveness with and without the restriction to English language studies: the ERG did not deduplicate search results. In the search carried out by the ERG on 08/06/2011, limiting to English language studies reduced the number of potentially relevant studies by 434 studies in MEDLINE and 866 studies in EMBASE.

Inclusion/Exclusion Criteria used in Study Selection

Inclusion/exclusion criteria applied by the manufacturer for their systematic review are summarised in Table 2 of the ERG report (see "Availability of Companion Documents" field).

The manufacturer presented flow diagrams of the numbers of studies included and excluded at each stage of the appraisal process.

The ERG would like to highlight that the manufacturer excluded reviews, meta-analyses, and pooled analysis during the appraisal process. The Centre for Reviews and Dissemination (CRD) highlights using reference lists of these types of publication as a source of potential additional studies. However, the ERG considers that no relevant studies have been omitted from the Clinical Effectiveness section.

See Section 4.1 of the ERG report (see the "Availability of Companion Documents" field) for more information about literature search strategy.

Economic Evaluation

Overview of the Manufacturer's Review of Cost-Effectiveness Evidence

The manufacturer provides a brief description of the review of published cost-effectiveness evidence. The databases searched and the search terms used appear to be reasonable and both inclusion and exclusion criteria are explicitly stated. The search identified only one cost-utility study of grid laser photocoagulation (GLP) in MO secondary to RVO. This study was not considered relevant to the decision problem, since it was entirely US-based and therefore not easily generalisable to the UK population.

Number of Source Documents

Clinical Effectiveness

- Three randomised controlled trials (RCTs) were included in the review.
- Nine conference abstracts related to these RCTs were included.
- Two articles that are clinical trial records for the two of these RCTs were also included.

Economic Evaluation

The manufacturer submitted an economic model.

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus

Rating Scheme for the Strength of the Evidence

Not applicable

Methods Used to Analyze the Evidence

Meta-Analysis of Randomized Controlled Trials

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Note from the National Guideline Clearinghouse (NGC): The National Institute for Health and Care Excellence (NICE) commissioned an independent academic centre to perform an assessment of the manufacturer's submission on the technology considered in this appraisal and prepare an Evidence Review Group (ERG) report. The ERG report for this technology appraisal was prepared by British Medical Journal Technology Assessment Group (BMJ-TAG) (see the "Availability of Companion Documents" field).

Clinical Effectiveness

Quality of Included Randomised Controlled Trials (RCTs)

The manufacturer assessed the quality of the three identified RCTs and rated BRAVO and CRUISE as high-quality. The manufacturer notes some methodological issues with ROCC. The ERG has validated the three RCTs and predominantly agrees with the manufacturer's assessments (see Appendix 2 of the ERG report [see the "Availability of Companion Documents" field] for quality assessments).

Meta-analysis of RCTs Identified for Ranibizumab in the Treatment of Macular Oedema (MO) Secondary to Central Retinal Vein Occlusion (CRVO)

In addition to the CRUISE RCT, the manufacturer identified a second smaller RCT – the ROCC RCT assessing the effect of ranibizumab in the treatment of MO secondary to CRVO. The manufacturer carried out a meta-analysis of the two studies, presenting the data in the appendices of the manufacturer's submission (MS). The NICE *Guide to the Methods of Technology Appraisal* recommends that "Synthesis of outcome data through meta-analysis is appropriate provided there are sufficient relevant and valid data that use measures of outcome that are comparable". The ERG notes that is it appropriate to present the results from the meta-analysis for review. The results of the meta-analysis indicate that there is strong evidence ($p < 0.00001$) that, in patients with MO secondary to non-ischaemic CRVO, ranibizumab is more effective than sham injection at improving best corrected visual acuity (as measured by Early Treatment Diabetic Retinopathy Study [ETDRS] score) at month 6.

The manufacturer carried out a fixed effects analysis of the change in mean best corrected visual acuity (BCVA) from baseline at month 6. The ERG replicated the meta-analysis carried out by the manufacturer and generated approximately the same result (see Figure 3 of the ERG report for forest plot from ERG analysis).

Although no heterogeneity was identified between the two studies ($I^2 = 0$), the ERG thinks it useful to present a comparison of the patient characteristics of the populations included in CRUISE and ROCC (see Table 13 of the ERG report), and the individual results of the outcome assessed in the meta-analysis (mean change in BCVA from baseline at month 6). Data from ROCC for mean change in BCVA score from baseline at months 1 and 3 are also reported in Table 13 of the ERG report.

See Section 4 of the ERG report for additional information.

Economic Evaluation

Summary of Manufacturer's Economic Evaluation

The manufacturer developed a *de novo* cost utility model to analyse the cost-effectiveness of ranibizumab monotherapy in the treatment of patients with visual impairment due to MO secondary to retinal vein occlusion (RVO).

Model Structure

The *de novo* cost utility analysis uses a Markov state transition model to evaluate the clinical and economic outcomes of a hypothetical cohort of 1000 patients, with a starting age of approximately 66 years, over a 15 year time horizon. The structure of the model is displayed in Figure 4 of the ERG report.

The model consists of eight different BCVA health states and the absorbing state of death; the BCVA health states are defined as bands of 10 Early Treatment Diabetic Retinopathy Study (ETDRS) letters (2 lines) based on the assumption that a change in visual acuity of two lines is clinically significant. Patients are initially distributed across the BCVA health states to reflect the baseline distribution of patients in the BRAVO and CRUISE trials for MO secondary to branch RVO (BRVO) and CRVO, respectively.

Each BCVA health state has an associated utility and mortality risk, depending on whether the better-seeing eye (BSE) or worse-seeing eye (WSE) is treated. In the base case analysis, it is assumed that all patients are treated in their BSE. Patients transition through the model in monthly cycles, accumulating the utility associated with each health state they enter, together with the costs of treatment and subsequent monitoring. In addition, patients experiencing adverse events (AEs) have an associated cost and disutility applied, and patients considered to be blind accumulate the additional costs of blindness; blindness is assumed to occur when patients have a visual acuity of ≤35 letters in their BSE.

Critique of Manufacturer's Economic Evaluation

The manufacturer's model is constructed in Microsoft© Excel with Visual Basic for Applications used for navigation and probabilistic sensitivity analysis (PSA). The model is generally well constructed, with appropriate calculation methods used throughout. The model is very flexible, allowing numerous scenario analyses to be conducted, using new and existing data. However, there were many hidden sheets and unlabelled tables, that reduced the transparency of the model and the use of data tables to generate the deterministic sensitivity analysis and the screen updating the PSA led to a slow running model in which it was difficult to see the impact of the probabilistic mode on the incremental cost-effectiveness ratio (ICER).

Model Structure

The ERG considers the model structure to be overly complicated, with more health states than necessary to capture patient outcomes and therefore the potential to overestimate utility gains. As part of the clarification process, the ERG requested scenario analysis in which the model uses the pre-specified trial outcome of a gain/loss of ≥15 letters rather than the analysis of 10 or more letters. The manufacturer failed to provide the requested analysis, citing time constraints.

See Sections 5 and 6 of the ERG report for additional information on economic evaluation.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Considerations

Technology appraisal recommendations are based on a review of clinical and economic evidence.

Technology Appraisal Process

The National Institute for Health and Care Excellence (NICE) invites 'consultee' and 'commentator' organisations to take part in the appraisal process. Consultee organisations include national groups representing patients and carers, the bodies representing health professionals, and the manufacturers of the technology under review. Consultees are invited to submit evidence during the appraisal and to comment on the appraisal documents.

Commentator organisations include manufacturers of the products with which the technology is being compared, the National Health Service (NHS) Quality Improvement Scotland and research groups working in the area. They can comment on the evidence and other documents but are not asked to submit evidence themselves.

NICE then commissions an independent academic centre to review published evidence on the technology and prepare an 'assessment report'. Consultees and commentators are invited to comment on the report. The assessment report and the comments on it are then drawn together in a document called the evaluation report.

An independent Appraisal Committee then considers the evaluation report. It holds a meeting where it hears direct, spoken evidence from nominated clinical experts, patients and carers. The Committee uses all the evidence to make its first recommendations, in a document called the 'appraisal consultation document' (ACD). NICE sends all the consultees and commentators a copy of this document and posts it on the NICE Web site. Further comments are invited from everyone taking part.

When the Committee meets again it considers any comments submitted on the ACD; then it prepares its final recommendations in a document called the 'final appraisal determination' (FAD). This is submitted to NICE for approval.

Consultees have a chance to appeal against the final recommendations in the FAD. If there are no appeals, the final recommendations become the basis of the guidance that NICE issues.

Who is on the Appraisal Committee?

NICE technology appraisal recommendations are prepared by an independent committee. This includes health professionals working in the NHS and people who are familiar with the issues affecting patients and carers. Although the Appraisal Committee seeks the views of organisations representing health professionals, patients, carers, manufacturers and government, its advice is independent of any vested interests.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

Summary of Appraisal Committee's Key Conclusions on the Manufacturer's Economic Model

Availability and Nature of Evidence

The Committee considered the manufacturer's original economic model and the critique and exploratory analyses performed by the Evidence Review Group (ERG). It broadly accepted the model structure, but was aware of the uncertainties highlighted by the ERG around the assumptions used by the manufacturer.

The Committee also considered the manufacturer's revisions to its economic model submitted in response to consultation and broadly accepted the

manufacturer's approach to:

- Reflecting that most patients (90%) would be treated in their 'worse-seeing eye'
- The use of utilities as applied using the Czoski-Murray equation, in absence of further evidence
- Applying unpooled transition probabilities although there was a lack of clear data
- The inclusion of updated adverse event rates in year 2, albeit cautiously

Uncertainties Around and Plausibility of Assumptions and Inputs in the Economic Model

The Committee considered that a 0.3 utility gain associated with treating the 'worse-seeing eye' seems high given that utility is driven primarily by the 'better-seeing eye', and therefore lacked face validity.

The Committee concluded that a utility gain of 0.1 associated with treating the 'worse-seeing eye' was appropriate.

The Committee concluded that the evidence on the risk of cardiovascular mortality associated with retinal vein occlusion (RVO) was unclear, and therefore it need not be included in the base-case model to the degree applied in the original ERG report. However it would remain an uncertainty in the analysis.

The Committee acknowledged that there were advantages and disadvantages to the manufacturer and ERG's approaches (to applying unpooled transition probabilities). But it concluded that, given the lack of clear data, the approach taken by the manufacturer was appropriate.

Although the Committee acknowledged the ERG's concerns with the methods used to estimate adverse events in year 2, it cautiously accepted the updated safety data in the model.

The Committee accepted that the relative effectiveness of ranibizumab and dexamethasone was uncertain and concluded that it was difficult to quantify any bias.

The Committee was aware of the remaining uncertainty because of the absence of a direct comparison with dexamethasone.

The Committee was aware that people receiving ranibizumab in the BRAVO trial could receive grid laser photocoagulation from month 3 and that this represented a significant confounding factor in both the manufacturer's and the ERG's calculations of the incremental cost-effectiveness ratio (ICER) for branch retinal vein occlusion (BRVO) compared with standard care. It therefore considered that this ICER would be an underestimate of the most plausible ICER.

Incorporation of Health-Related Quality-of-Life Benefits and Utility Values/Have Any Potential Significant and Substantial Health-Related Benefits Been Identified That Were Not Included in the Economic Model, and How Have They Been Considered?

The Committee noted that the BRAVO and CRUISE trials reported a statistically significant difference in National Eye Institute Visual Functioning Questionnaire-25 (NEI VFQ-25) score at month 6 between the ranibizumab and sham injection groups. The Committee concluded that treating patients with ranibizumab improved the quality of life of people with macular oedema secondary to RVO.

The Committee concluded that although uncertain, the use of utilities as applied using the Czoski-Murray equation was acceptable.

The Committee concluded that a utility gain of 0.1 associated with treating the 'worse-seeing eye' was appropriate.

The Committee was not aware of any substantial benefits of ranibizumab over its comparators that would not be already captured into the quality-adjusted life year (QALY) estimation in the modelling.

Are There Specific Groups of People for Whom the Technology Is Particularly Cost-Effective?

The Committee concluded that ranibizumab should be recommended as an option for treating visual impairment caused by macular oedema following BRVO if grid laser photocoagulation has not been beneficial or is not suitable because of the extent of macular haemorrhage.

What Are the Key Drivers of Cost-Effectiveness?

The ERG exploratory analyses highlighted that the key drivers that increased the manufacturer's base-case incremental ICERs were amending the proportion of patients treated in their 'better-seeing eye' (10% instead of 100%) and the assumption of some benefit associated with treating the 'worse-seeing eye'.

The Committee considered that a 0.3 utility gain associated with treating the 'worse-seeing eye' seems high given that utility is driven primarily by the 'better-seeing eye', and therefore lacked face validity.

Most Likely Cost-Effectiveness Estimate (Given as an ICER)

Ranibizumab was associated with an ICER of £26,200 per QALY gained compared with best supportive care in central retinal vein occlusion (CRVO).

The Committee concluded that the most plausible ICER for ranibizumab compared with standard care in treating BRVO was in excess of £44,800 per QALY gained.

Method of Guideline Validation

External Peer Review

Description of Method of Guideline Validation

Consultee organisations from the following groups were invited to comment on the draft scope, Assessment Report and the Appraisal Consultation Document (ACD) and were provided with the opportunity to appeal against the Final Appraisal Determination.

- Manufacturer/sponsors
- Professional/specialist and patient/carer groups
- Commentator organisations (without the right of appeal)

In addition, individuals selected from clinical expert and patient advocate nominations from the professional/specialist and patient/carer groups were also invited to comment on the ACD.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of evidence supporting the recommendations is not specifically stated.

The Appraisal Committee considered clinical and cost-effectiveness evidence submitted by the manufacturer of ranibizumab and a review of this submission by the Evidence Review Group. For clinical effectiveness, two randomised controlled trials (RCTs) were the main source of evidence. For cost-effectiveness, the manufacturer's model was considered.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate use of ranibizumab for treatment of visual impairment caused by macular oedema secondary to retinal vein occlusion

Potential Harms

Adverse reactions to treatment are mostly limited to the eye. Those commonly reported in clinical trials include vitritis, vitreous detachment, retinal haemorrhage, visual disturbance, eye pain, vitreous floaters, conjunctival haemorrhage, eye irritation, sensation of a foreign body in the eye, increased production of tears, blepharitis, dry eye, ocular hyperaemia, itching of the eye and increased intraocular pressure. Nasopharyngitis, arthralgia and headaches are also commonly reported.

For full details of adverse reactions and contraindications, see the summary of product characteristics available at http://emc.medicines.org.uk/ .

Contraindications

Contraindications

Contraindications to ranibizumab include known hypersensitivity to the active substance or to any of its excipients, active or suspected ocular or periocular infections, and active severe intraocular inflammation.

For full details of adverse reactions and contraindications, see the summary of product characteristics available at http://emc.medicines.org.uk/ .

Qualifying Statements

Qualifying Statements

- This guidance represents the views of the National Institute for Health and Care Excellence (NICE) and was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.
- Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.

Implementation of the Guideline

Description of Implementation Strategy

- Section 7(6) of the National Institute for Health and Care Excellence (Constitution and Functions) and the Health and Social Care Information Centre (Functions) Regulations 2013 requires clinical commissioning groups, NHS England and, with respect to their public health functions, local authorities to comply with the recommendations in this appraisal within 3 months of its date of publication.
- When NICE recommends a treatment 'as an option', the National Health Service (NHS) must make sure it is available within the period set out in the paragraph above. This means that, if a patient has visual impairment caused by macular oedema secondary to retinal vein occlusion and the doctor responsible for their care thinks that ranibizumab is the right treatment, it should be available for use, in line with NICE's recommendations.
- The Department of Health and the manufacturer have agreed that ranibizumab will be available to the NHS with a patient access scheme which makes ranibizumab available with a discount. The size of the discount is commercial in confidence. It is the responsibility of the manufacturer to communicate details of the discount to the relevant NHS organisations. Any enquiries from NHS organisations about the patient access scheme should be directed to Novartis Pharmaceuticals UK Commercial Operations Team on 01276 698717 or Commercial.Team@novartis.com.
- National Institute for Health and Care Excellence (NICE) has developed tools to help organisations put this guidance into practice (listed below). These are available on the NICE Web site .
    - Costing template and report to estimate the national and local savings and costs associated with implementation.

Implementation Tools

Foreign Language Translations

Patient Resources

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

National Institute for Health and Care Excellence (NICE). Ranibizumab for treating visual impairment caused by macular oedema secondary to retinal vein occlusion. London (UK): National Institute for Health and Care Excellence (NICE); 2013 May. 62 p. (Technology appraisal guidance; no. 283).

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2013 May

Guideline Developer(s)

National Institute for Health and Care Excellence (NICE) - National Government Agency [Non-U.S.]

Source(s) of Funding

National Institute for Health and Care Excellence (NICE)

Guideline Committee

Appraisal Committee

Composition of Group That Authored the Guideline

Committee Members: Professor Andrew Stevens, (*Chair of Appraisal Committee C*), Professor of Public Health, University of Birmingham; Professor Gary McVeigh, (*Vice chair of Appraisal Committee C*), Professor of Cardiovascular Medicine, Queens University Belfast and Consultant Physician, Belfast City Hospital; Dr David Black, Director of Public Health, Derbyshire County Primary Care Trust; Dr Daniele Bryden, Consultant in Intensive Care Medicine and Anaesthesia, Sheffield Teaching Hospitals NHS Trust; Dr Andrew Burnett, Director for Health Improvement and Medical Director, NHS Barnet, London; David Chandler, Lay Member; Dr Mary Cooke, Lecturer, School of Nursing, Midwifery and Social Work, University of Manchester; Dr Chris Cooper, General Practitioner, St John's Way Medical Centre, London; Professor Peter Crome, Consultant Geriatrician and Professor of Geriatric Medicine, Keele University; Dr Christine Davey, Research Adviser, North and East Yorkshire Alliance Research and Development Unit, York; Richard Devereaux-Phillips, Director, Public Policy and Advocacy NW Europe, BD, Oxford; Professor Rachel A Elliott, Lord Trent Professor of Medicines and Health, University of Nottingham; Dr Greg Fell, Consultant in Public Health, Bradford and Airedale Primary Care Trust; Dr Wasim Hanif, Consultant Physician and Honorary Senior Lecturer, University Hospital Birmingham; Dr Alan Haycox, Reader in Health Economics, University of Liverpool Management School; Professor Cathy Jackson, Professor of Primary Care Medicine, University of St Andrews; Dr Peter Jackson, Clinical Pharmacologist, University of Sheffield; Dr Janice Kohler, Senior Lecturer and Consultant in Paediatric Oncology, Southampton University Hospital Trust; Dr Grant Maclaine, Director, Health Economics and Outcomes Research, BD, Oxford; Henry Marsh, Consultant Neurosurgeon, St George's Hospital, London; Professor Eugene Milne, Deputy Regional Director of Public Health, North East Strategic Health Authority, Newcastle upon Tyne; Dr Neil Myers, General Practitioner, Glasgow; Professor Stephen O'Brien, Professor of Haematology, Newcastle University; Professor Katherine Payne, Professor of Health Economics, University of Manchester; Dr Danielle Preedy, Lay Member; Dr Martin Price, Head of Outcomes Research, Janssen-Cilag, Buckinghamshire; Alan Rigby, Academic Reader, University of Hull; Dr Peter Selby, Consultant Physician, Central Manchester University Hospitals NHS Foundation Trust; Dr Surinder Sethi, Consultant in Public Health Medicine, North West Specialised Services Commissioning Team, Warrington; Dr John Stevens, Lecturer in Bayesian Statistics in Health Economics, School of Health and Related Research, Sheffield; Dr Matt Stevenson, Technical Director, School of Health and Related Research, University of Sheffield; Professor Paul Trueman, Professor of Health Economics, Brunel University, London; Dr Judith Wardle, Lay Member

Financial Disclosures/Conflicts of Interest

Committee members are asked to declare any interests in the technology to be appraised. If it is considered there is a conflict of interest, the member is excluded from participating further in that appraisal.

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available from the National Institute for Health and Care Excellence (NICE) Web site .

Availability of Companion Documents

The following is available:

- Ranibizumab for treating visual impairment caused by macular oedema secondary to retinal vein occlusion. Costing template. London (UK): National Institute for Health and Care Excellence (NICE); 2013 May. (Technology appraisal 283). Electronic copies: Available from the National Institute for Health and Care Excellence (NICE) Web site .

Patient Resources

The following is available:

- Ranibizumab for macular oedema caused by retinal vein occlusion. Information for the public. London (UK): National Institute for Health and Care Excellence (NICE); 2013 May. 6 p. (Technology appraisal 283). Electronic copies: Available from the National Institute for Health and Care Excellence (NICE) Web site . Also available in Welsh from the NICE Web site .

NGC Status

This NGC summary was completed by ECRI Institute on August 28, 2013.

The National Institute for Health and Care Excellence (NICE) has granted the National Guideline Clearinghouse (NGC) permission to include summaries of their Technology Appraisal guidance with the intention of disseminating and facilitating the implementation of that guidance. NICE has not verified this content to confirm that it accurately reflects the original NICE guidance and therefore no guarantees are given by NICE in this regard. All NICE technology appraisal guidance is prepared in relation to the National Health Service in England and Wales. NICE has not been involved in the development or adaptation of NICE guidance for use in any other country. The full versions of all NICE guidance can be found at www.nice.org.uk.

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